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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/853,225
Filing Date: May 11, 2001
Appellant(s): STRONGIN ET AL.

Mark W. Sincell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 29 November 2006 appealing from the Office action mailed 23 August 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 1-3, 5-14, and 16-33. Claims 1-2, 5-13, and 16-33 stand rejected under 35 U.S.C. §103(a), not 102(b), as being obvious over Walker, et al (U.S. Patent No. 5,771,390) in view of Angelo, et al (U.S. Patent No. 6,581,162). Claims 3 and 14 stand rejected under 35 U.S.C. §103(a), not 102(b), as being obvious over Walker in view of Angelo and admitted prior art.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Walker et al., U.S. Patent Number 5,771,390 issued 23 June 1998

Angelo et al., U.S. Patent Number 6,581,162 issued 17 June 2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 5-13, and 16-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al., U.S. Patent Number 5,771,390 (herein referred to as Walker) in view of Angelo et al., U.S. Patent Number 6,581,162 (herein referred to as Angelo).

Referring to claims 1, 12, 25, 28, and 31, taking claim 12 as exemplary, Walker has taught a computer system, comprising:

A processor (Walker column 3, line 64 to column 4, line 44 and Figure 2); and

A device coupled to the processor (Walker column 3, line 64 to column 4, line 44 and Figure 2), wherein the device includes:

An indicator configured to indicate when the processor is in a first operating mode (Walker column 1, lines 40-64; column 2, lines 31-37;

column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4);

A first timer configured to indicate a duration in which the indicator is active (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4); and

Control logic coupled to receive the duration from the first timer, wherein the control logic is configured to provide a control signal to the processor upon the duration reaching a predetermined value (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4).

Walker has not taught the first operating mode is a secure operating mode. Angelo has taught the first operating mode is a secure operating mode (Angelo column 6, lines 20-22). Angelo has taught that system management mode (SMM) and system management interrupts (SMIs) are traditionally used for power managements, as taught by Walker, but teaches that SMM and SMIs have been expanded to be used within computer security for memory management (Angelo column 7, line 43 to column 8, line 15). A person of ordinary skill in the art at the time the invention was made, and as taught by Angelo, using SMM and SMIs in computer security memory management protects the encryption process from malicious software and viruses and minimizes the danger of destroyed encryption keys remaining in computer memory (Angelo column 3, lines 34-41), thereby improving computer security memory

management. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the computer security use of SMM and SMIs in the device of Angelo to improve computer security memory management. Claim 15 is substantially equivalent to claim 4. The differences between the claims are in the type of apparatus or method language.

Claim 12 is substantially equivalent to claims 1, 25, 28, and 31. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 12 is used for similar limitations found within these claims.

Referring to claims 2 and 13, taking claim 13 as exemplary, Walker has taught wherein the device comprises a bridge (Walker column 3, line 64 to column 4, line 44 and Figure 2). Claim 13 is substantially equivalent to claim 2. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 13 is used for similar limitations found within these claims.

Referring to claims 5 and 16, taking claim 16 as exemplary, Walker in view of Angelo has taught wherein the secure operating mode includes SMM (Angelo column 6, lines 20-22). Claim 16 is substantially equivalent to claim 5. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 16 is used for similar limitations found within these claims.

Referring to claims 6 and 17, taking claim 17 as exemplary, Walker in view of Angelo has taught wherein the control signal is configured to indicate that the processor should exit (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4) the secure

operating mode (Angelo column 7, line 43 to column 8, line 15 and column 9, lines 52-63). Claim 17 is substantially equivalent to claim 6. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 17 is used for similar limitations found within these claims.

Referring to claims 7 and 18, taking claim 18 as exemplary, Walker has taught wherein the predetermined value is less than about 2 seconds (Walker column 5, lines 20-31). In regards to Walker, the time period does not matter. Claim 18 is substantially equivalent to claim 7. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 18 is used for similar limitations found within these claims.

Referring to claims 8 and 19, taking claim 19 as exemplary, Walker has taught wherein the predetermined value is not substantially less than 200 milliseconds (Walker column 5, lines 20-31). In regards to Walker, the time period does not matter. Claim 19 is substantially equivalent to claim 8. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 19 is used for similar limitations found within these claims.

Referring to claims 9 and 20, taking claim 20 as exemplary, Walker has taught wherein the predetermined value is set by software or firmware executing in the device (Walker column 5, lines 20-31). In regards to Walker, the time period does not matter. Claim 20 is substantially equivalent to claim 9. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 20 is used for similar limitations found within these claims.

Referring to claims 10 and 21, Walker has taught

A second timer configured to indicate a duration since the control signal has been provided (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4);

Wherein the control logic is further coupled to receive an indication from the second timer of the duration, wherein the control logic is further configured to provide a second control signal upon the duration since the control signal has been provided reaching a second predetermined value (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4).

Claim 21 is substantially equivalent to claim 10. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 21 is used for similar limitations found within these claims.

Referring to claims 11 and 22, taking claim 22 as exemplary, Walker in view of Angelo has taught wherein the second control signal is configured to indicate that the computer system should enter (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4) the second operating mode (Angelo column 7, line 43 to column 8, line 15 and column 9, lines 52-63). Claim 22 is substantially equivalent to claim 11. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 22 is used for similar limitations found within these claims.

Referring to claim 23, Walking in view of Angelo has taught a register coupled to receive a jump address for an interrupt (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4) the secure operating mode (Angelo column 7, line 43 to column 8, line 15 and column 9, lines 52-63), wherein the jump address corresponds to the processor entering the secure operating mode (Angelo column 8, lines 12-15; column 9, lines 23-51).

Referring to claim 24, Walker in view of Angelo has taught wherein the interrupt comprises a system management interrupt (SMI) (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4) the secure operating mode (Angelo column 7, line 43 to column 8, line 15 and column 9, lines 52-63) wherein the secure operating mode comprises system management mode (SMM) (Angelo column 8, lines 12-15; column 9, lines 23-51).

Referring to claims 26, 29, and 32, taking claim 26 as exemplary, Walker has not taught

> Wherein determining if the computer system is in a secure operating mode (Angelo column 6, lines 20-22) includes determining if the computer system is in system management mode (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4), and
>
> Wherein asserting a control signal if the first timer has reached the predetermined value includes executing a return from SMM (RSM) instruction before an SMI handler exits the system management mode (Walker column 1, lines 40-64;

column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4).

Claim 26 is substantially equivalent to claims 29 and 32. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 26 is used for similar limitations found within these claims.

Referring to claims 27, 30, and 33, taking claim 27 as exemplary, Walker has taught

Issuing an SMI request (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4);

The computer system entering system management mode (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4); and

The SMI handler servicing the SMI request (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4);

Wherein executing an RSM instruction before an SMI handler exits the system management mode occurs while the SMI handler is servicing the SMI request (Walker column 1, lines 40-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and Figure 4).

Claim 27 is substantially equivalent to claims 30 and 33. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 27 is used for similar limitations found within these claims.

Claims 3 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al., U.S. Patent Number 5,771,390 (herein referred to as Walker)) in view of Angelo et al., U.S. Patent Number 6,581,162 (herein referred to as Angelo), as applied to claims 2 and 13 above, and in further view of Applicant's admitted Prior Art (herein referred to as Prior Art). Taking claim 14 as exemplary, Walker has not explicitly taught wherein the bridge comprises a south bridge. However, Walker has taught that there is a bridge (Walker column 3, line 64 to column 4, line 44 and Figure 2). Prior Art has taught wherein the bridge comprises a south bridge (Prior Art page 3, line 19 to page 4, line 8). A person of ordinary skill in the art at the time the invention was made would have recognized that a south bridge provides interface between elements, thereby ensuring proper communication occurs between elements within the system. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the south bridge of Prior Art in the device of Walker to ensure proper communication between elements within the system. Claim 14 is substantially equivalent to claim 3. The differences between the claims are in the type of apparatus or method language. The rejection used above for claim 14 is used for similar limitations found within these claims.

Below is a table breakdown of independent claim 12.

Claim 12	Rejection
A computer system, comprising	
A processor; and	Walker Column 3, line 64 to column 4, line 44 "...As shown, the computer system includes a central processing unit (CPU) **102**..." Figure 2, element 102 CPU
A device coupled to the processor, wherein the device includes:	Walker Column 3, line 64 to column 4, line 44 "...As shown, the computer system includes a central processing unit (CPU) **102** coupled through a CPU local bus **104**..." Figure 2, elements 104 and 106
An indicator configured to indicate when the processor is in a secure operating mode;	Walker has taught "an indicator configured to indicate when the processor is in a first operating mode" Column 1, lines 38-64 "In general, a computer system with power management software may have a plurality of states consuming varying amounts of power..." Column 2, lines 31-37 "When the computer system is in the full-on state during normal use, a period of inactivity, which may be preset by the user, triggers the system management software to cause the computer system to enter a standby state, which is a first stage of reduced power. After an addition period of inactivity, system management software is again

Claim 12	Rejection
An indicator configured to indicate when the processor is in a secure operating mode (cont.);	triggered to place the computer system in the suspend state..." Column 2, line 60 to column 3, line 3 "When a resume event occurs, such as the user hitting a key, or the RTC alarm the system management software is invoked and determines if the resume event was an RTC alarm indicating a cascade to the suspend-to-disk state..." Column 3, lines 41-59 "The computer system includes system management software which, based on varying periods of inactivity, causes the computer system to enter various reduced power states..." Column 4, line 61 to column 5, line 58 "...the computer system preferable includes user programmable inactivity periods which determine when the computer system cascades from the full-on state to the standby state and then to the suspend state and finally to the suspend-to-disk state...if the computer system has been inactive for a period of time greater than the standby inactivity time in step **302**, then an SMI interrupt for standby mode is asserted in step **304**..." Figure 3, elements 302, 304, 308, and 310 Figure 4, elements 402 and 406 Walker has not taught the first operating mode is a secure operating mode. Angelo has taught the first operating mode is a secure operating mode (Angelo column 6, lines 20-22 "An additional feature of the computer

Claim 12	Rejection
An indicator configured to indicate when the processor is in a secure operating mode (cont.);	system S is a System Management Mode (SMM)..."; column 7, line 61 to column 8, line 4 "...the processor **102** begins executing an SMI handler routine **210**, which is an interrupt service routine to perform specific system management tasks such as reducing power to specific devices or, as in the case of the present invention, providing security services..."; and Figure 4, element 210). Angelo has taught that system management mode (SMM) and system management interrupts (SMIs) are traditionally used for power management, such as that taught by Walker (Walker column 4, lines 48-51 "The Intel chip set supports an interrupt referred to as the System Management Interrupt or SMI, which is a high priority interrupt used for power management functions..."; column 5, lines 39-58 "...if the computer system has been inactive for a period of time greater than the standby inactivity time in step **302**, then an SMI interrupt for standby mode is asserted in step **304**..."; and Figure 3, elements 304 and 310), but teaches that SMM and SMIs have been expanded to be used within computer security for memory management (Angelo column 7, line 43 to column 8, line 15 "...include a mode referred to as system management mode (SMM), which is entered upon receipt of a system management interrupt (SMW). Originally, SMIs were power management interrupts

Claim 12	Rejection
An indicator configured to indicate when the processor is in a secure operating mode (cont.);	devised by Intel Corporation for portable systems... the processor **102** begins executing an SMI handler routine **210**, which is an interrupt service routine to perform specific system management tasks such as reducing power to specific devices or, as in the case of the present invention, providing security services..." and Figure 4, element 210). A person of ordinary skill in the art at the time the invention was made, and as taught by Angelo, using SMM and SMIs in computer security memory management protects the encryption process from malicious software and viruses and minimizes the danger of destroyed encryption keys remaining in computer memory (Angelo column 3, lines 34-41 "...by maintaining the passwords, encryption keys and algorithms in secure memory, the encryption process can be protected from exposure to malicious software programs or viruses written to circumvent security measures..."), thereby improving computer security memory management. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the computer security use of SMM and SMIs in the device of Angelo to improve computer security memory management.

Claim 12	Rejection
A first timer configured to indicate a duration in which the indicator is active; and	Walker Column 1, lines 40-64 "...a computer system with power management software may have a plurality of states consuming varying amounts of power..." Column 2, lines 31-37 "When the computer system is in the full-on state during normal use, a period of inactivity, which may be preset by the user..." Column 2, line 60 to column 3, line 3 "...if the resume event was an RTC alarm indicating a cascade to the suspend-to-disk state..." Column 3, lines 41-59 "...The computer system includes system management software which, based on varying periods of inactivity, causes the computer system to enter various reduced power states..." Column 4, line 61 to column 5, line 58 "...The system of the present invention uses the real time clock (RTC) **164** as the timer for calculating the period of inactivity which directs the computer system...if the computer system has been inactive for a period of time greater than the standby inactivity time in step **302**, then an SMI interrupt for standby mode is asserted in step **304**..." Figure 3, elements 302, 308, and 312 Figure 4, elements 402 and 406

Claim 12	Rejection
Control logic coupled to receive the duration from the first timer, wherein the control logic is configured to provide a control signal to the processor upon the duration reaching a predetermined value.	Walker Column 1, lines 40-64 "...a computer system with power management software may have a plurality of states consuming varying amounts of power..." Column 2, lines 31-37 "When the computer system is in the full-on state during normal use, a period of inactivity, which may be preset by the user..." Column 2, line 60 to column 3, line 3 "...if the resume event was an RTC alarm indicating a cascade to the suspend-to-disk state..." Column 3, lines 41-59 "...The computer system includes system management software which, based on varying periods of inactivity, causes the computer system to enter various reduced power states..." Column 4, line 61 to column 5, line 58 "...The system of the present invention uses the real time clock (RTC) **164** as the timer for calculating the period of inactivity which directs the computer system...if the computer system has been inactive for a period of time greater than the standby inactivity time in step **302**, then an SMI interrupt for standby mode is asserted in step **304**..." Figure 3, elements 302, 308, and 312 Figure 4, elements 402 and 406

Below is a table showing the mapping between limitations in Claim 12 and the other independent claims 1, 25, 28, and 31.

Claim 12	Claim 1	Claim 25	Claim 28	Claim 31
A computer system, comprising:	A device configured for use in a computer system, comprising:	A method for operating a computer system, the method comprising:	A method for operating a computer system, the method comprising:	A computer readable program storage device encoded with instructions that, when executed by a computer system, performs a method of operating the computer system, the method comprising:
A processor; and				

A device coupled to the processor, wherein the device includes:				
An indicator configured to **indicate** when the processor is **in a secure operating mode**;	An indicator configured to **indicate** when the computer system is **in a secure operating mode**;	**Determining** if the computer system is **in a secure operating mode**;	Step for **determining** if the computer system is **in a secure operating mode**;	**Determining** if the computer system is **in a secure operating mode**;
A **first timer** configured to indicate a duration in which the indicator is active; and	A **first timer** configured to indicate a duration in which the indicator is active; and	Initiating a **first timer** if the computer system is in the first operating mode;	Step for initiating a **first timer** if the computer system is in the first operating mode;	Initiating a **first timer** if the computer system is in the first operating mode;

Control logic coupled to **receive the duration** from the first timer,	Control logic coupled to **receive the duration** from the first timer,	Determining if the first timer has **reached a predetermined value**; and	Step for determining if the first timer has **reached a predetermined value**; and	Determining if the first timer has **reached a predetermined value**; and
Wherein the control logic is configured to **provide a control signal** to the processor **upon the duration reaching a predetermined value.**	Wherein the control logic is configured to **provide a control signal upon the duration reaching a predetermined value.**	**Asserting a control signal if the first timer has reached the predetermined value.**	Step for **asserting a control signal if the first timer has reached the predetermined value.**	**Asserting a control signal if the first timer has reached the predetermined value.**

(10) Response to Argument

In general, when attempting to generally describe Walker, Applicants arguments miss-characterizes Walker by taking an extremely narrow view and interpretation of Walker. Applicants' arguments states on page 6 "Accordingly, Walker describes setting a real-time clock alarm prior to placing the computer in the suspend state. When the real-time clock alarm

expires, the computer system may transition from the suspend state to the suspend-to-disk state." Applicants' arguments appear to focus on the specific implementation and use taught in Walker and does not consider that Walker, in general, discuses switching system states based upon timers. Walker's specific implementation just happens to be switching power management modes based upon timers. By taking such a narrow view and interpretation of Walker, it appears that Applicants' arguments are attempting to establish that Walker and Angelo are non-analogous art as the basis for their arguments regarding claim specifics and lack of motivation to combine Walker and Angelo. However, to establish non-analogous art Applicants' arguments must establish that: 1) the reference was not in the field of applicant's endeavor and 2) the reference was not reasonably pertinent to the particular problem with which the inventor was concerned (See MPEP 2141.01(a) with reference to *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 14458 (Fed. Cir. 1992)). Neither of which are clearly established in Applicants' arguments.

In addition, the Examiner would establish that Walker and Angelo have met not only one but both conditions laid forth by *In re Oetiker* required to be considered "analogous prior art". Applicants' invention is concerned with, according to the independent claim language, asserting or providing a control signal in response to a timer that indicates the duration of a secure operating mode. Therefore, to meet the first requirement of analogous art laid forth by *In re Oetiker*, Walker and Angelo must "be in the field of applicant's endeavor." A broad interpretation of the field of endeavor would be Applicants' field of endeavor is computers, which Walker and Angelo are also concerned with. An extremely narrow interpretation of the field of endeavor would be Applicants' field of endeavor is for providing a control signal in

response to a timer that indicates the duration of an operating mode. The fact that the claim language refers to the operating mode as a "secure operating mode" is an incidental consideration, because there is nothing within the independent claim language with regards to the specifics of the "secure operating mode". The bulk of the claim language appears to concern itself with providing or asserting the control signal in response to the timer. Walker teaches asserting or providing SMI interrupts, e.g. control signals, in response to timers indicating the duration of an operating mode. Applicants' arguments suggest that Walker is only concerned with whether to shutdown a computer system or not, but Walker is concerned with much more than shutting down a system. In fact, Walker is concerned more with when to signal a move, which he refers to as "cascade", from one operating mode, which he refers to as "stages", because the specifics of how to shutdown a computer system is not taught. Rather, Walker has taught how and when a system signals a change in operating mode. Walker's operating modes just happen to be called "standby state", "suspend state", and "suspend-to-disk state" instead of "secure operating mode". Angelo also teaches asserting or providing SMI interrupts, e.g. control signals, in response to timers indicating the duration of an operating mode, which he has taught is specifically for computer security. To meet the second requirement of analogous art laid forth by *In re Oetiker*, Walker and Angelo must "be reasonably pertinent to the particular problem with which the inventor was concerned." As stated before, Applicants' invention, according to the independent claim language, is mainly concerned with providing or asserting a control signal according to a timer that indicates the duration of an operating mode. The fact that the claim language refers to the operating mode as a "secure operating mode" is an incidental consideration, because of the lack of language in the claims to give this label more weight. As

can be seen in the rejection above, Walker and Angelo are both concerned with providing or asserting an SMI interrupts in response to timers. Consequently, Walker and Angelo meet not only one of the criteria for analogous prior art as laid forth and required by *In re Oetiker* but both criteria.

Also, Applicants' arguments appear to attempt to establish that Walker in view of Angelo is an improper combination. The Examiner responds to specific arguments against the combination of elements and lack of motivation below. However, the Examiner would like to note that independent claims 1, 25, 28, and 31 are broader in scope than claim 12, which was the exemplary claim in the previous rejections and the rejection above. Given the breadth of claims 1, 25, 28, and 31, a rejection of Angelo in view of Walker would also be proper. A combination rejection is the combination of the references, in this case Walker and Angelo, so whether Angelo is added into Walker or Walker is added into Angelo is irrelevant since the combination of the two references is what is being used to reject the claims.

Applicants argue in essence on pages 4-6 and 8

> ...Accordingly, Walker does not teach or suggest using the real-time clock alarm to determine a duration of a secure operating mode.
> ...However, Angelo does not (explicitly or inherently) describe or suggest a timer configured to indicate a duration of a second operating mode.
> Thus, Applicants respectfully submit that neither Walker nor Angelo teaches or suggests a timer configured to indicate a duration of a secure operating mode...

This has not been found persuasive. As the Examiner indicated in the previous Office Action dated 23 August 2006, Walker was relied upon to show the details of the operating mode switch from one mode to another, which includes a timer to indicate a duration of a first operating mode (Walker column 1, lines 29-64; column 2, lines 31-37; column 2, line 60 to column 3, line 3; column 3, lines 44-59; column 4, line 61 to column 5, line 58; Figure 3; and

Figure 4). However, Walker's specific disclosure is focused on using his invention for power management mode switching, such as switching to system management mode (SMM) (Walker column 1, lines 29-37) and system mode interrupts (SMIs) (Walker column 5, lines 39-57 and Figure 3). The Examiner acknowledges in the rejection that Walker has not taught his operating modes are a type "secure operating mode" as required by the claim language. The Examiner draws on secondary reference, Angelo, to teach that the operating mode can be a "secure operating mode". Specifically, Angelo teaches that SMM and SMIs, while traditionally used in the power management environment taught in Walker, have found usefulness in computer security management as well (Angelo column 7, line 43 to column 8, line 15). Angelo specifically states in column 7, line 66 to column 8, line 4 "After the processor state is saved, the processor 102 begins executing an SMI handler routine 210, which is an interrupt service routine that perform specific system management tasks such as reducing power to specific devices or, as in the case of the present invention, providing security services." Angelo reiterates this in column 8, lines 39-50 with "Importantly, the SMI handler **210** can be written such that it performs tasks other than power-down operations. An SMI handler **210** written according to the present invention is able to utilize machine identification information **212**, encryption keys **214**, and an encryption algorithm **216** to securely perform encryption operations..." Therefore, the combination of Walker in view of Angelo, wherein Walker teaches the specific implementation of changing operating modes with a timer and Angelo teaches that the operating modes include a secure operating mode, teaches Applicant's claim limitations.

Applicants argue in essence on pages 6-8

> Walker nor Angelo provide any suggestion or motivation to modify the prior art of record to arrive at the claimed invention.

This has not been found persuasive. Angelo explicitly states in column 3, lines 1-4 "Session keys, passwords, and encryption algorithms are maintained in a secure memory space such as System Management Mode (SMM) memory." Angelo further expands upon this in column 3, lines 34-37 by stating "...by maintaining the passwords, encryption keys and algorithms in secure memory, the encryption process can be protected from exposure to malicious software programs or viruses written to circumvent security measures..." and in column 8, lines 39-50 "...Because SMM memory **200** is only addressable while the computer system is in SM, storing machine identification **212**, encryption keys **214** and the encryption algorithm **216** in SMM memory **200** prevents malicious code from modifying or reading these sensitive components of the disclosed embodiment of the invention." Therefore, Angelo states explicitly that using SMM for security is necessary to protect passwords, encryption keys and algorithms against malicious software programs or viruses, which was the motivation relied upon by the Examiner to combine the two references.

Applicants argue further on page 7

> However, the prior art does not teach or suggest that the pre-existing timers are disabled in different secure modes and, in particular, neither Walker nor Angelo teaches that the techniques described in Angelo affect power consumption in any way...

This has not been found persuasive. First, the claim language, taking claim 12 as exemplary, states "an indicator configured to indicate when the processor is in a secure operating mode" and "a first timer configured to indicate a duration in which the indicator is active". This language merely claims that the system has a signal or flag of some sort that shows when the system is in a secure operating mode and how long it has been in that secure operating mode.

There is no language in the claim regarding timers being disabled in different secure modes. As the Examiner stated in the responses above and in the previous Office Action, Walker discusses timers in regards to their use in power management, specifically with System Management Mode (SMM) power management. Also, as discussed above, Angelo has taught that SMM is traditionally used in power management, but has been found to be useful in computer security, specifically securely storing passwords, encryption keys and algorithms.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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